

Pancreatic Cancer In Ohio, 1998-2002

September 2005

Ohio
Cancer
Incidence
Surveillance
System



This Report on Pancreatic Cancer Contains:

- Incidence and Mortality in Ohio Compared to the United States
- Average Annual Case Counts and Rates by County of Residence
- Age-specific Incidence Rates by Gender
- Proportion of Cases and Survival by Stage at Diagnosis and Gender
- Incidence Rates by Gender and Race in Ohio Compared to the United States
- Risk Factors
- Sources of Data and Additional Information

Pancreatic Cancer Incidence and Mortality in Ohio

Cancers of the pancreas made up 2.2 percent of the incident (newly diagnosed) cancers reported to the Ohio Cancer Incidence Surveillance System (OCISS) for the years 1998 through 2002 (Table 1). The average annual age-adjusted pancreatic cancer incidence rate during this time period was 10.5 cases per 100,000 residents (1,240 cases per year), which is about 6 percent lower than the average annual age-adjusted U.S. (SEER¹) incidence rate of 11.2 cases per 100,000 residents. Average annual numbers and rates represent the number of cases diagnosed *per year* on average, not the total number of cases diagnosed during the five-year time period. Completeness of reporting of invasive pancreatic cancer is estimated to be 97 percent for 1998-2002, meeting the national standard of 95 percent for complete case ascertainment.

**Table 1: Leading Cancer Sites/Types:
Average Annual Number and Percent of Invasive
Cancer Cases in Ohio, 1998-2002**

	Avg Annual Number	Percent
All Sites/Types	55,679	100.0%
Lung and Bronchus	9,059	16.3%
Breast (Female)	8,373	15.0%
Prostate	7,761	13.9%
Colon and Rectum	6,724	12.1%
Bladder	2,671	4.8%
⋮		
Pancreas	1,240	2.2%

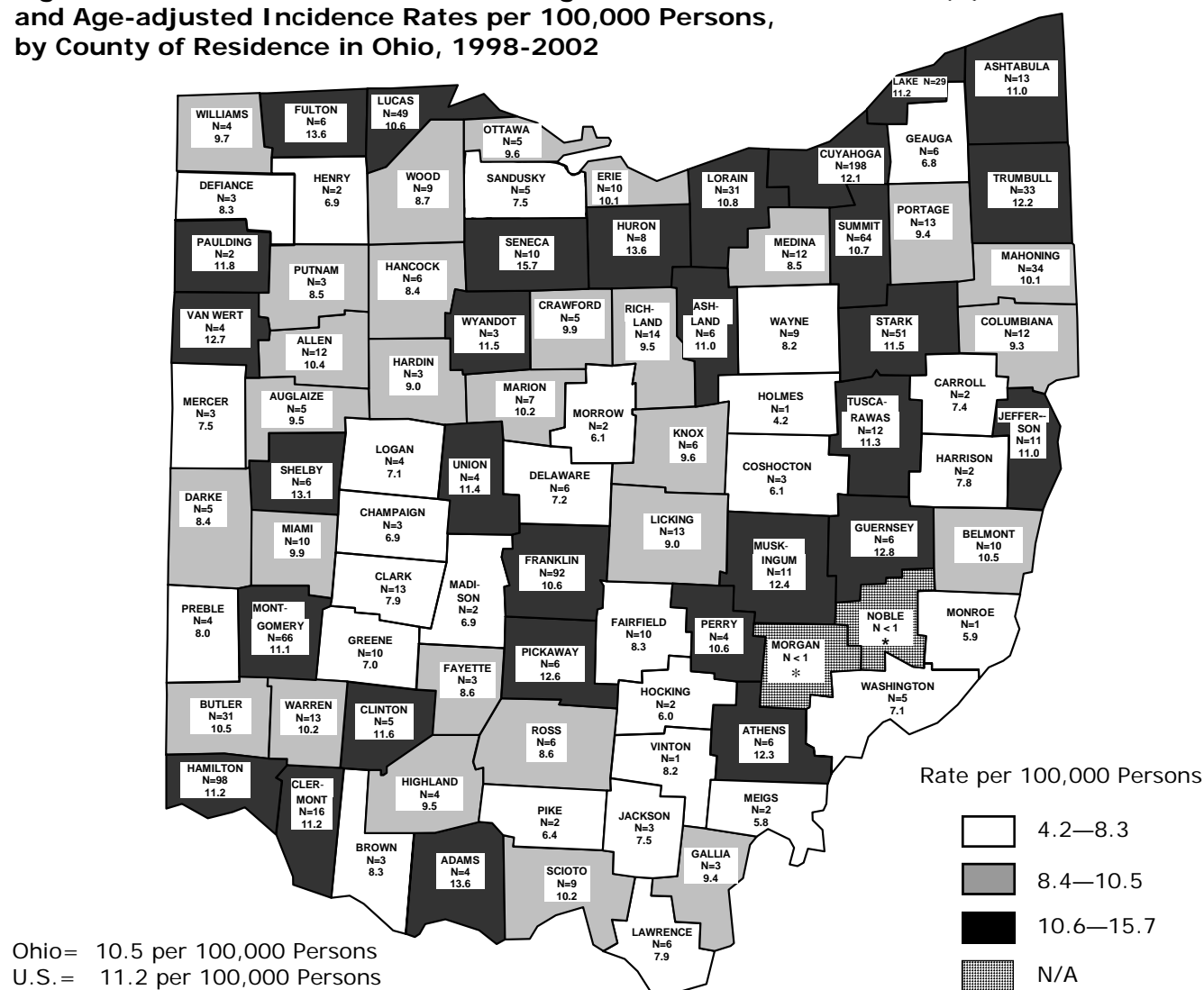
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2005.

The 1998-2002 Ohio average annual age-adjusted mortality rate for pancreatic cancer of 10.2 deaths per 100,000 residents is slightly less than the U.S. (NCHS²) mortality rate of 10.5 deaths per 100,000 for the same time period. Between 1975 and 2002, the U.S. mortality rate for pancreatic cancer has remained relatively stable, fluctuating between 10.4 and 10.9 deaths per 100,000 residents.

[1] SEER: Surveillance, Epidemiology and End Results Program, National Cancer Institute.

[2] NCHS: National Center for Health Statistics.

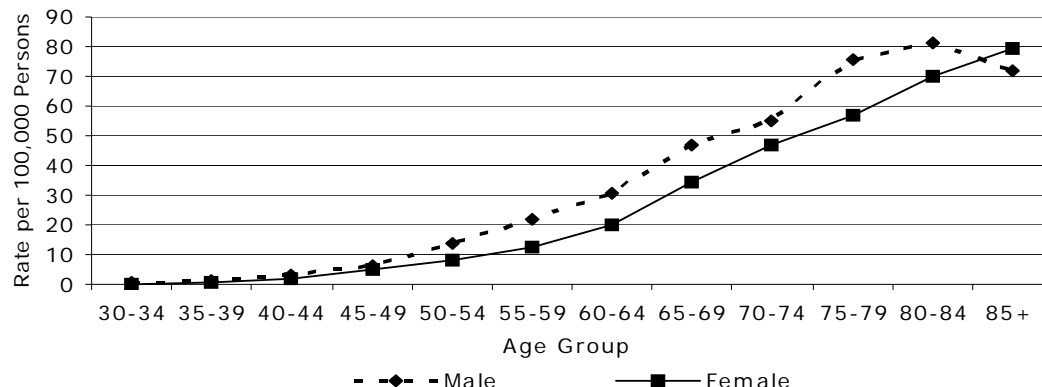
Figure 1: Cancer of the Pancreas: Average Annual Number of Cases (N) and Age-adjusted Incidence Rates per 100,000 Persons, by County of Residence in Ohio, 1998-2002



- Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2005.
- Rates for 1998-2002 are calculated using re-calculated intercensal population estimates for July 1, 1998-1999; bridged estimates for April 1, 2000; and post-censal estimates for July 1, 2001-2002 (U.S. Census Bureau, 2004). Rates are direct age-adjusted to the U.S. 2000 standard population.
- Each category represents approximately 33%, or 29, of the 88 Ohio counties.
- * Not Applicable (N/A). Rates may be unstable and are not presented when the case count for 1998-2002 is less than five (i.e. the average annual count is less than one).

As seen in Figure 1, 1998-2002 average annual age-adjusted pancreatic cancer incidence rates differ by county of residence. Eight of 10 counties with the highest percentage of black race fall within the highest rate category (10.6 or more cases per 100,000 residents): Cuyahoga, Franklin, Hamilton, Montgomery, Lucas, Summit, Stark and Lorain. The following counties have the highest incidence rates for this time period (13.1 or more cases per 100,000 residents): Adams (N = 4), Fulton (N = 6), Huron (N = 8), Seneca (N = 10) and Shelby (N = 6). It should be noted that low rates may reflect underreporting for that county and should be interpreted with caution.

Figure 2: Cancer of the Pancreas: Age-specific Incidence Rates (ages 30+) per 100,000 Persons, by Gender in Ohio, 1998-2002



Did You Know?

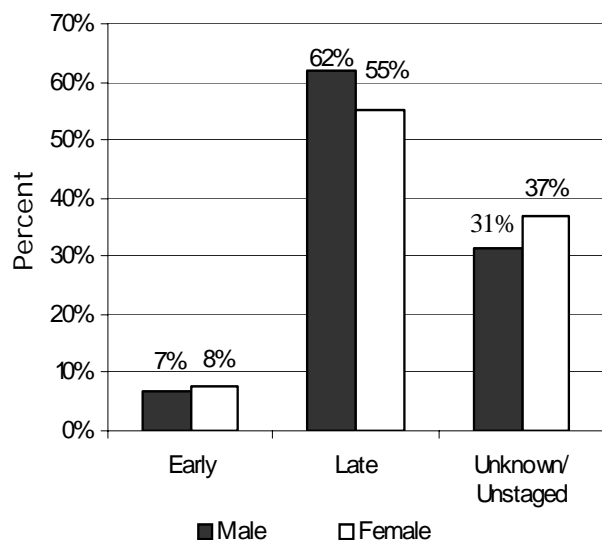
Pancreatic cancer is the 4th-leading cause of cancer death in both men and women and has the poorest likelihood of survival among the common types of cancer.

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2005.

As shown in Figure 2, the incidence of pancreatic cancer in Ohio is rare among persons less than 30 years of age and increases with advancing age group. For all age groups except ages 85 and older, the pancreatic cancer incidence rates for males are greater than the rates for females. These age- and gender-specific patterns are not only seen in Ohio but also at the national level. The gender difference in pancreatic cancer incidence rates may be due to a greater prevalence of certain risk factors such as smoking among males.

Pancreatic Cancer Cases and Survival by Stage at Diagnosis

Figure 3: Cancer of the Pancreas: Proportion of Cases (%) by Stage at Diagnosis and Gender in Ohio, 1998-2002



N = 1,243 Cases per Year

The stage at diagnosis of pancreatic cancer is an important determinant of survival. For *in situ* cancers, the tumor has not invaded or penetrated surrounding tissue. In the localized stage, the tumor is confined to the organ in which it originated. In the regional stage, the tumor has spread to surrounding tissues. In the distant stage, the malignancy has spread, or metastasized, to other organs. In Ohio in 1998-2002, only 7 percent of pancreatic cancers were diagnosed at the earliest (*in situ* and localized) stages, whereas 59 percent were diagnosed at the later (regional and distant) stages. As shown in Figure 3, males in Ohio were more likely to be diagnosed at later stages (62 percent) compared to females (55 percent).

U.S. (SEER) five-year survival probability for pancreatic cancer in 1995-2001 was only 4.3 percent for all stages combined. Five-year survival probabilities were 17.0 percent at the localized stage, 6.9 percent at the regional stage and only 1.5 percent for distant-stage tumors. Prognosis is poor for this cancer site because pancreatic tumors are difficult to see or feel due to their location in the body and are often aggressive and disseminate quickly.

- Note: <1% of cases were diagnosed *in situ* (N = 3).
- Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2005.
- Five-year survival source: SEER Cancer Statistics Review 1975-2002, National Cancer Institute, 2005.

Pancreatic Cancer Incidence in Ohio Compared to the United States

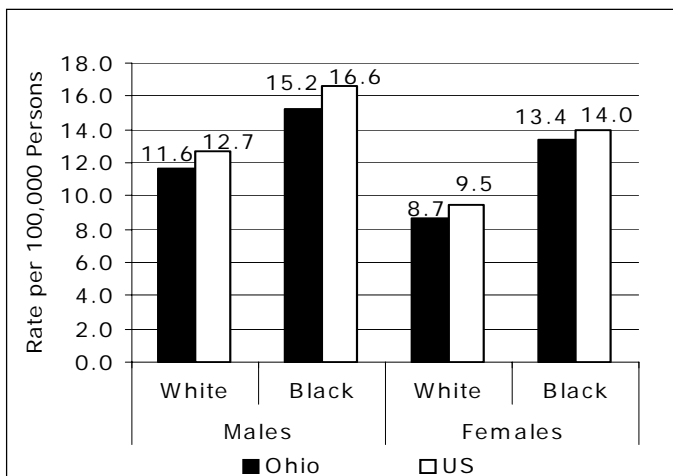


Figure 4: Pancreatic Cancer: Average Annual Age-adjusted Incidence Rates per 100,000 Persons, by Gender and Race in Ohio with Comparison to the U.S. (SEER), 1998-2002

Figure 4 presents average annual age-adjusted incidence rates of pancreatic cancer by gender and race. This figure reveals that the rates are greater for males compared to females for both whites and blacks, and the rates are greater for blacks compared to whites for both genders. It is also shown in Figure 4 that pancreatic cancer incidence rates are lower in Ohio compared to the United States for all gender/race categories.

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2005, and the Surveillance, Epidemiology and End Results Program, National Cancer Institute, 2005.

Risk Factors for Pancreatic Cancer

- **Age** — Pancreatic cancer risk increases with age. More than 70 percent of pancreatic cancers occur in people over the age of 65.
- **Gender** — Males are more likely than females to develop pancreatic cancer.
- **Race** — African Americans are more likely to develop pancreatic cancer compared to other races.
- **Smoking** — Cigarette smokers are two to three times more likely than nonsmokers to develop pancreatic cancer. About 30 percent of pancreatic cancers are causally associated with cigarette smoking.
- **Diabetes** — Pancreatic cancer occurs more often in people who have diabetes (particularly Type II) than in people who do not.
- **Family history** — Persons with a family history of pancreatic, colon or ovarian cancer; the BRCA2 gene mutation; familial adenomatous polyposis; familial atypical multiple-mole melanoma; and ataxia-telangiectasia have a greater risk of developing pancreatic cancer.
- **Chronic pancreatitis** — Chronic pancreatitis, a condition involving long-term inflammation of the pancreas, may increase risk.
- **Diet** — A diet rich in meats, fat, oil, salt and calories may increase pancreatic cancer risk, while a diet rich in fruits, vegetables, fiber and vitamin C may offer some protection.
- **Occupational exposure** — Exposure to certain pesticides, dyes and chemicals related to gasoline may increase risk.

Sources of Data and Additional Information

- **Ohio Cancer Incidence Surveillance System:**
http://www2.odh.ohio.gov/ODHPrograms/CI_SURV/ci_surv1.htm
- **National Cancer Institute:**
<http://www.cancer.gov/cancertopics/types/pancreatic>
- **American Cancer Society:**
http://www.cancer.org/docroot/CRI/CRI_2_3x.asp?rnav=cridg&dt=34

The Ohio Cancer Incidence Surveillance System (OCISS)

Ohio Department of Health
and
The Arthur G. James Cancer Hospital and
Richard J. Solove Research Institute at
The Ohio State University

To address comments and information requests:

Ohio Cancer Incidence Surveillance System
Ohio Department of Health
246 North High Street
Columbus, OH 43215

Phone: (614) 752-2689
Fax: (614) 644-1909
E-mail:
ociss@odh.ohio.gov

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